Oracle® MiniCluster S7-2 Getting Started Guide

This guide provides condensed instructions for setting up and configuring Oracle's MiniCluster S7-2. Use this guide if you are already familiar with the setup and configuration procedures for MiniCluster. For more detailed setup and configuration instructions, refer to the *Oracle MiniCluster S7-2 Installation Guide*.

Installation and Configuration Checklists

Following are checklists that you can use to verify that you have completed the necessary tasks to install and configure your MiniCluster:

- "Pre-Installation Checklist" on page 1
- "Hardware Installation and Cabling Checklist" on page 2
- "Software Configuration Checklist" on page 3

Pre-Installation Checklist

Order	Procedure	Description	Task Completed?
1.	Gather system-specific networking configuration information and enter into DNS.	■ Download the Initial Configuration tool and enter the necessary information into the tool, including: 　■ Management network information: 　　■ DNS servers 　　■ NTP servers 　　■ Default router 　■ Client access network information: 　　■ DNS servers 　　■ NTP servers 　　■ Default router ■ Generate IP addresses (use only IPv4 addresses): 　■ System-level: 12 total (2 on the management network and 10 on the client access network) 　■ DB VM group: 2 per VM and 3 SCAN (7 total for a 2-node RAC) 　■ App VM group: 1 per VM ■ Enter system-level information into DNS and use Check IP to verify information was entered into DNS correctly. Ensure that DNS is configured with IPv4 IP addresses. See "Initial Configuration Tasks" on page 4.	
2.	Download and extract the MiniCluster component bundle.	See "Download the MiniCluster Component Bundle" on page 14.	

Hardware Installation and Cabling Checklist

Order	Procedure	Description	Task Completed?
1.	Mount the compute nodes and storage array in a rack, if necessary.	Refer to the *Oracle MiniCluster S7-2 Installation Guide*.	
2.	Connect the 10GbE private network.	The 10GbE private network transfers data between the two compute nodes. It is also used for the RAC interconnect when Oracle RAC is installed on MiniCluster. Connect the NET 0 and NET 1 ports from one compute node to the other compute node. See "10GbE Private Network Connections" on page 17.	
3.	Connect the storage arrays to the compute nodes.	Connect the storage arrays to the compute nodes using: ■ SAS cards installed in PCIe slots 2 and 3 in the compute nodes ■ I/O modules in the storage arrays See "Base Storage Array Connections" on page 17 and "Connect Second Storage Array to the Compute Nodes" on page 18.	
4.	Connect to the NET MGT port.	You must connect to the NET MGT port as part of the software configuration process. Connect a Category 5 (or better) RJ-45 cable from the NET MGT ports on both compute nodes to your network switch or hub. See "Management Network Connections" on page 19.	
5.	Connect the 10GbE client access network.	Connect from both compute nodes to the 10GbE client access network through either: ■ 10GbE NIC installed in PCIe slot 1 in each compute node ■ NET 2 and NET 3 ports on the compute nodes See "10GbE Client Access Network Connections" on page 19.	
6.	Connect to the SER MGT port.	Connect to the SER MGT port to assign a static IP address to the NET MGT port. Connect a Category 5 (or better) RJ-45 cable from the SER MGT port on compute node 1 to a terminal device. See "SER MGT Connection" on page 20.	
7.	Connect the power cords and power on the storage array and two compute nodes.	■ For the storage array, plug the power cords to the two power supplies, and push the on/off switches on both power supplies to the on (I) position. ■ For the two compute nodes, plug the power cords to the two power supplies. Power on the compute nodes by either pressing the System Power buttons on both compute nodes or entering `start /SYSTEM` at the ILOM prompt. See "Powering On MiniCluster" on page 21.	

Software Configuration Checklist

Order	Procedure	Description	Task Completed?
1.	Assign IP address to NET MGT port.	See "Assign a Static IP Address to the NET MGT Port" on page 22.	
2.	Configure MiniCluster using `installmc`.	■ If you used the Initial Configuration Tool earlier: 1. Connect to the Oracle ILOM on the first compute node through the NET MGT port. Log in as the `mcinstall` user, then run `installmc --init` to create a temporary IP address for the compute node. 2. Transfer the `userinputs.txt` and `omcips.txt` configuration files to the first compute node. See "Log In To Compute Node 1 (Oracle ILOM)" on page 24 and "Copy Configuration Files to Compute Node 1" on page 25. ■ Run `installmc --deploy` to go through the first half of the system setup. See "Perform Initial Configuration" on page 26.	
3.	Transfer and install MiniCluster component bundle.	See "Transfer and Install MiniCluster Component Bundle" on page 30.	
4.	Create and approve the Install Administrator and Supervisor accounts.	■ In a browser, start the MCMU BUI on the first compute node. In the MCMU Registration window, type the necessary information to create the Install Administrator and Supervisor accounts, including: ■ Email address of the new Install Administrator ■ Email address of the Supervisor ■ Username for the Supervisor See "Log In To the MCMU BUI for the First Time" on page 31 and "Create the Install Administrator Account" on page 32. ■ On the first compute node, bring up the mail that was sent to the `mcinstall` user. Use the information in that mail to approve the Install Administrator account. See "Approve the New Install Administrator Account" on page 32 and "Finish Setting Up the Install Administrator Account" on page 33.	
5.	Finish setting up Supervisor account.	See "Finish Setting Up the Supervisor Account" on page 33.	
6.	Complete second half of system setup.	See "Set Up the System" on page 34.	
7.	(Optional) Create a database virtual machine group.	As part of the initial configuration, you are provided with a walk-through on creating a database virtual machine group, which consists of these steps: 1. Creating and deploying a database virtual machine group 2. Creating an Oracle database home 3. Creating an Oracle database instance Refer to the *Oracle MiniCluster S7-2 Installation Guide*.	
8.	(Optional) Create an application virtual machine group.	As part of the initial configuration, you are provided with a walk-through on creating an application virtual machine group. Refer to the *Oracle MiniCluster S7-2 Installation Guide*.	
9.	Configure the mctuner notification email address.	Refer to the section "Configure the mctuner Notification Email Address (CLI)" in the *Oracle MiniCluster S7-2 Administration Guide*.	

Performing Preliminary Tasks

There are certain preliminary tasks that you can complete prior to receiving your MiniCluster, which will reduce the amount of setup time you will go through when your MiniCluster arrives at your site.

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Initial Configuration Tasks

Run the Initial Configuration tool on any system outside of MiniCluster to provide initial configuration information for your MiniCluster, though at some point in the procedure, you will need to run the tool on the same network where you will be installing MiniCluster. When you finish providing all the necessary configuration information, the tool generates two text configuration files (`userinputs.txt` and `omcips.txt`) that you copy to the first MiniCluster compute node to complete the configuration process.

▼ Bring Up Initial Configuration Tool

1. **Log in to My Oracle Support (MOS).**

   Go to the My Oracle Support site:

   https://support.oracle.com/

   and click on the `Sign In` button to log in to the site.

2. **Access the MiniCluster MOS note 2153282.1 that contains information on downloading the Initial Configuration tool.**

   Enter `2153282.1` in the search field in the upper right corner of the page, or in the search field beneath the `Enter search terms` text lower on the page, and locate the MiniCluster MOS note (`Oracle MiniCluster S7-2 Software Download Center`).

3. **Locate the section in the MOS note that provides information on the** *latest* **version of the Initial Configuration tool.**

   Click on the `Latest Release` link at the top of the MOS note, or on the `MiniCluster Initial Configuration Tool` link beneath the `Latest Release` link, to go to the section in the MOS note with the latest version of the Initial Configuration tool.

4. **Click on the patch ID link for the latest version of the Initial Configuration Tool.**

   The Initial Configuration tool is contained within a patch. Clicking on the patch ID brings you to the download page for this particular patch.

5. **Follow the instructions in the patch page to download the patch zip file that contains the Initial Configuration tool.**

   Download the patch zip file onto any system, such as a laptop. Note that the information in the `Platform or Language` field on the patch page refers to the OS that runs on MiniCluster itself, not the OS for the system

where you will be running the tool. The Initial Configuration tool can be run on a Windows, Solaris or Linux environment.

You will use the Initial Configuration tool to enter system-level configuration information for your MiniCluster. At one point later in the Initial Configuration tool process, the tool uses the information that you enter to verify system-level IP addresses and host names on the network, so at that point, you must run the tool on the same network where you will be installing MiniCluster. However, if necessary, you can enter the majority of the configuration information into the tool on any system, without being connected to the same network where MiniCluster will be installed. These procedures will tell you when you are at the point when you must be connected to the same network where you will be installing MiniCluster.

6. Extract the downloaded patch zip file.

A TAR file and README text file are created.

7. Extract the TAR file.

The UserInput directory is created.

8. Change to the `UserInput` directory and start the Initial Configuration tool.

- In a Windows environment, double-click the config-tool.bat file or enter the following in a terminal window from the directory containing the file:

  config-tool

- In a Solaris or Linux environment, enter the following in a terminal window from the directory containing the file:

  ./config-tool.sh

The Initial Configuration tool window appears.

▼ Provide General Configuration Information

Make the following selections in the General pane.

1. Provide information in the Machine field, if necessary.

- Select the type of MiniCluster system that you ordered. Only valid option is S7-2.
- If you have a previously-completed configuration file that you want to import, click the Import Configuration File button and navigate to the userinputs.txt file that you want to import. The remaining fields in this screen automatically populate with the information that you provided in the previously-completed configuration file.

Note - Do not attempt to import an omcips.txt file into the Initial Configuration tool. While an omcips.txt file could contain similar previously-completed configuration information, the Initial Configuration tool recognizes and imports information only from a userinputs.txt file and will not recognize and import any information from an omcips.txt file.

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2. **In the Hostname Prefix field, enter the system-level host name prefix to be used for your MiniCluster.**

   The host name prefix must be 20 alphanumeric characters or fewer. For example, `mc2`.

   > **Tip -** Because the host name prefix will be used along with the domain name to generate host names for components in the system, using a short host name prefix, such as `mc2`, will make the component-level host names shorter and less cumbersome.

3. **In the Domain Name field, enter the domain name for your company.**

   The name can contain alphanumeric characters, periods (.), and hyphens (-). The name must start with an alphanumeric character. This field cannot be empty.

   Together, these Hostname Prefix and Domain Name fields are used when host names are generated for components in the system.

   For example, a value of `mc2` as the system-level host name prefix and `us.example.com` as the domain name results in the following host names generated for components in the system:

   - `mc2-n1-ilom.us.example.com` for the Oracle ILOM host name for the service processor in the first compute node
   - `mc2-n1.us.example.com` for the host name for the first compute node
   - `mc2-n2-ilom.us.example.com` for the Oracle ILOM host name for the service processor in the second compute node
   - `mc2-n2.us.example.com` for the host name for the second compute node

   And so on.

▼ Provide Management Network Configuration Information

Ideally, the management network should be on a separate subnet from the client network, but they can be on the same subnet, if necessary.

1. **In the Network Settings pane, click the Management Network tab.**

   The configuration fields for the management network is displayed.

2. **Enter two IP addresses for the management network in the Management IP Address Compute Node 1 and Compute Node 2 fields.**

   The two management network IP addresses do not have to be consecutive, but they should be on a separate subnet from the client network IP addresses.

3. **Enter the gateway IP address for the management network in the Gateway IP Address field.**

   For example, `10.129.105.1`.

4. **Enter the CIDR equivalent of the subnet mask for the management network in the CIDR Prefix field.**

For example, 24.

Use this table to find the CIDR equivalent of your subnet mask.

Subnet Mask, 1 of 2	CIDR Prefix, 1 of 2	Subnet Mask, 2 of 2	CIDR Prefix, 2 of 2
255.255.255.255	/32	255.254.0.0	/15
255.255.255.254	/31	255.252.0.0	/14
255.255.255.252	/30	255.248.0.0	/13
255.255.255.248	/29	255.240.0.0	/12
255.255.255.240	/28	255.224.0.0	/11
255.255.255.224	/27	255.192.0.0	/10
255.255.255.192	/26	255.128.0.0	/9
255.255.255.128	/25	255.0.0.0	/8
255.255.255.0	/24	254.0.0.0	/7
255.255.254.0	/23	252.0.0.0	/6
255.255.252.0	/22	248.0.0.0	/5
255.255.248.0	/21	240.0.0.0	/4
255.255.240.0	/20	224.0.0..0	/3
255.255.224.0	/19	192.0.0.0	/2
255.255.192.0	/18	128.0.0.0	/1
255.255.128.0	/17	0.0.0.0	/0
255.255.0.0	/16		

5. **Enter the IP addresses for the management domain name servers in the DNS Server 1, 2, and 3 fields.**

At least one DNS server IP address must be provided. The entries for the DNS servers can be the same, or they can be different, from the entries for the DNS servers that you will provide in the Management Network tab.

6. **Enter the IP addresses for the management Network Time Protocol servers in the NTP Server 1 and 2 fields.**

At least one NTP server IP address must be provided. The entries for the NTP servers can be the same, or they can be different, from the entries for the NTP servers that you will provide in the Management Network tab.

Note - Verify that you have the correct management DNS and NTP server entries in these fields before proceeding. Once you have completed the initial installation of your system, you cannot change the management DNS and NTP server entries without resetting your MiniCluster system. Note that this is only true for the *management* DNS and NTP servers; you can change the *client* DNS and NTP servers after initial installation.

7. **Determine if you want to set up a VLAN configuration on the management network.**

- If you do not want to set up a VLAN configuration on the management network, leave the two VLAN fields blank. Go to .
- If you want to set up a VLAN configuration on the management network, determine if you want to set up a tagged VLAN configuration or an untagged (port-based) VLAN configuration.
    - **VLAN ID** — If you want to set up a tagged VLAN configuration on the management network, enter the VLAN tag ID.
    - **Port VLAN ID** — If you want to set up an untagged (port-based) VLAN configuration on the management network, enter the port VLAN ID.

▼ Provide Client Network Configuration Information

Ideally, the client network should be on a separate subnet from the management network, but they can be on the same subnet, if necessary.

1. **In the Network Settings pane, click the Client Network tab.**

   The configuration fields for the client access network is displayed.

2. **Click on the Configure IP Allocation button.**

   The Configure IP Allocation window appears.

3. **Enter the starting IP address for the client access network and the IP address pool size.**

   Information that you enter into this tool will assign IP addresses for the client access network. The first twelve IP addresses will be assigned to components at the system level (for example, for the two compute nodes and the kernel zone), and the remaining IP addresses will be used for the database and application virtual machines that you create later on.

   - **Starting IP address** — The starting IP address for the IP addresses assigned to the client access network.
   - **IP Address Pool Size** — The total number of IP addresses that you need for the client access network. Beginning with the starting IP address you entered above, this number represents the number of consecutive IP addresses that will be available for the system-level components, such as compute nodes, and the client access network when creating database or application virtual machines and groups.

     You need at least twelve IP addresses for the client access network for the system-level components. The additional number of IP addresses that you need for virtual machines and groups varies, depending on the number of virtual machines and groups you create. However, the maximum number of IP addresses that you need for virtual machines and groups is typically around 45.

4. **Click the Add button.**

   The starting IP and IP address pool size information is populated into the table on this page.

5. **Add additional IP addresses for the client access network, if necessary.**

   You can add additional sets of IP addresses for the client access network by entering additional starting IP addresses and IP pool size information in those fields, and clicking the Add button for each set. Each set of new starting IP addresses and IP address pool size is populated into the table each time.

Note - All IP addresses on the client network must be from the same IP subnet. Multiple subnets on the same client network are not supported.

Tip - Consecutive IP addresses are assigned for each range that you enter into the Configure IP Allocation window, starting with the entry that you put into the Starting IP Address field for that range. However, if you need to have individual, non-consecutive IP addresses for the client access network, enter each IP address in the Starting IP Address field, and enter 1 in the IP Address Pool Size, then click the Add button. Repeat this process to configure multiple non-consecutive IP addresses for the client access network.

6. **Verify that the information that you entered in the Configure IP Allocation window is correct.**

   To delete a set of IP addresses from the list, select that set of address and click Delete.

   You can access this window again from the main Initial Configuration tool window. However, once you have completed the Initial Configuration tool process and you have generated the IP addresses, the only way to change the IP address pool information is to completely rerun these procedures again.

   Note - Even though this IP address pool information will be set once you complete the Initial Configuration tool process, you can add additional IP addresses to the client access network IP address pool using the MiniCluster BUI. Refer to the *Oracle MiniCluster S7-2 Administration Guide* for more information.

7. **When you finish entering the information in the Configure IP Allocation window, click OK.**

   The Configure IP Allocation window disappears, and the IP address information is populated with the information that you entered in the Configure IP Allocation window.

   If you provided information for more than one set of IP addresses in the Configure IP Allocation window, then the IP address information will reflect everything that you entered in the Configure IP Allocation window. For example, if you entered information for two sets of IP addresses, and entered 25 for the IP pool size for each of those two sets of IP addresses, you would see 50 in the IP Pool Size field.

   You can click the Configure IP Allocation button again to view or edit the IP addresses that you entered for the client access network.

8. **Enter the gateway IP address for the client access network in the Gateway IP Address field.**

   For example, `10.129.106.1`.

9. **Enter the subnet mask for the client network in the CIDR Prefix field.**

   For example, 23. See Step 4 in "Provide Management Network Configuration Information" on page 6 for the table to find the CIDR equivalent of your subnet mask.

10. **Enter the IP addresses for the client domain name servers in the DNS Server 1, 2, and 3 fields.**

    At least one IP address must be provided, starting with the DNS Server 1 field. The entries for the DNS servers can be the same, or they can be different, from the entries for the DNS servers that you provided in the Management Network tab.

11. **Enter the IP addresses for the client Network Time Protocol servers in the NTP Server 1 and 2 fields.**

At least one IP address must be provided, starting with the NTP Server 1 field. The entries for the NTP servers can be the same, or they can be different, from the entries for the NTP servers that you provided in the Management Network tab.

Note - If you find that you need to change the client DNS or NTP server entries at any time after the initial installation is complete, you can make those changes through the MCMU BUI. Refer to the *Oracle MiniCluster S7-2 Administration Guide* for those instructions. Note that you cannot change the *management* DNS or NTP server entries after the initial installation without a system reset.

12. **In the Network Redundancy Type field, determine the method that you want to use to make the client access network highly available.**

    Options are IPMP (IP network multipathing) or LACP (link aggregation control protocol).

    Note - Do not choose LACP unless you are certain that your switch is properly configured to support LACP.

    If you select LACP, complete the following fields:

    - **Load Balancing Policy** — The load balancing policy. Options are L4, L2, or L3.
    - **Configured LACP Mode** — The configured LACP mode. Options are:
        - **Active** — Enables LACP unconditionally.
        - **Passive** — Enables LACP only when an LACP device is detected.

13. **Determine if you want to set up a VLAN configuration on the client access network.**

    - If you do not want to set up a VLAN configuration on the client access network, leave the two VLAN fields blank. Go to Step 14.
    - If you want to set up a VLAN configuration on the client access network, determine if you want to set up a tagged VLAN configuration or an untagged (port-based) VLAN configuration.

        Note - Do not choose a VLAN configuration unless you are certain that your switch is properly configured to support VLANs.

        - **VLAN ID** — If you want to set up a tagged VLAN configuration on the client access network, enter the VLAN tag ID.
        - **Port VLAN ID** — If you want to set up an untagged (port-based) VLAN configuration, enter the port VLAN ID.

14. **In the Client Connectivity field, select the method that you will use to connect MiniCluster to the 10GbE client access network.**

    Options are:

    - **Copper** — Choose this option if you are connecting to the client access network through the NET 2 and NET 3 ports, using Category 6/6E (RJ45) Ethernet cabling.

- **Fiber** — Choose this option if you are connecting to the client access network through the 10GbE NIC, using either of the these two cables:
  - QSFP to 4x SFP copper splitter cable
  - MPO to 4x LC duplex fiber optic splitter cable

See for more information.

▼ Provide Remaining Configuration Information

1. In the Miscellaneous pane, enter this information:

- **Time Zone** — Time zone where MiniCluster will be installed. For example, America/Los_Angeles.
- **Storage Array No.** — The number of storage arrays that you are connecting as part of the initial installation. Options are 1 or 2.

Note - Select **only** the number of storage arrays that you are connecting as part of the initial installation in this field. If you are connecting a single storage array as part of the initial installation but you plan to connect a second storage array at a later date (after the installation is complete), select 1 for this field. You can add another storage array through the MiniCluster software when you install the second storage array at the later date.

2. In the Security Profile pane, enter this information:

Security Profile — Sets the security profile at the system level and for the global zone. Options are:

- **CIS Equivalent** — Satisfies requirements comparable and equivalent to benchmarks set forth by Center for Internet Security (CIS).
- **PCI DSS** — Complies with the Payment Card Industry Data Security Standard (PCI DSS) standard defined by the Payment Card Industry Security Standards Council.
- **STIG** — Satisfies the organizations requiring security controls and compliance with Security Technical Implementation Guides for Oracle Solaris 11 published by the United States Defense Information Systems Agency.

Note - Consider your choice for the Security Profile carefully. Once you have completed these procedures and exit out of the Initial Configuration tool, you will not be able to change this system-level option afterwards.

▼ Generate IP Mapping Information for DNS

1. When you finish entering the necessary information into the Initial Configuration tool, click the appropriate button at the bottom of the screen.

- **Review** — Begins the review process to verify that all the information entered in the tool is valid. Go to Step 2.

- **Reset** — Clears all the fields in the tool.
- **Exit** — Exits out of the tool.

2.   Verify the summary information.

A screen appears with a summary of the information that you entered, including the IP address and host name mapping for the management and client access networks.

3.   Enter the necessary information shown in the IP Hostname Mapping pane into DNS.

The IP address information that you provided in the IP Allocation pane is displayed.

The first 12 IP addresses, which have hostnames provided automatically through the tool, are for the management network (2 IP addresses) and client access network (10 IP addresses) for the system-level components. Enter all 12 of these system-level IP address and host names into DNS before proceeding. These 12 IP addresses are automatically used for these system-level components:

- On the management network, Oracle ILOM for the service processors (SPs) in compute nodes 1 and 2 (two IP addresses and host names)
- On the client access network:
    - Host names for compute nodes 1 and 2 (two IP addresses and host names)
    - Host names for kernel zones on compute nodes 1 and 2 (two IP addresses and host names)
    - Oracle RAC VIP for kernel zones on compute nodes 1 and 2 (two IP addresses and host names)
    - NFS VIP (one IP address and host name)
    - SCAN IP addresses for system-level Oracle RAC (three IP addresses and host names)

The remaining unassigned IP addresses on the client access network will be used later on when you create virtual machines.

4.   Determine if you are running the Initial Configuration tool on a system that is on the same network where MiniCluster will be installed.

The next step verifies that the IP Hostname Mapping information was entered into DNS correctly and assumes that you are connected to the same network where MiniCluster will be installed.

- If you are running the Initial Configuration tool on a system that is on the same network where MiniCluster will be installed, go to Step 5.
- If you are *not* on the same network where MiniCluster will be installed, you can continue with these instructions at this time without verifying that the information was entered into DNS correctly. However, you must return to these instructions later on, when you are able to run the Initial Configuration tool on the same network where MiniCluster will be installed, and verify the information prior to setting up MiniCluster.

    If you are postponing the DNS check until a later date, continue to Step 7 to generate the necessary configuration files, including the userinputs.txt file, and continue with the remaining preliminary configuration tasks. At a later date, when you are on the same network where MiniCluster will be installed (but prior to receiving your MiniCluster), click the Import Configuration File button described in "Provide General Configuration Information" on page 5 to import the userinputs.txt that you

generated, then repeat these instructions from this point to use the Check IP button to verify the DNS information before setting up your MiniCluster.

5. **After you have entered the system-level IP addresses and host names into DNS, click the Check IP button.**

   The tool checks DNS to verify you entered the information into DNS properly. A progress bar appears at the bottom of the screen, providing status for this check.

6. **Verify that the system-level IP addresses and host names were entered into DNS properly.**

   Note - The `unreachable` part in the Status field is expected, because you are running this IP check before you set up your MiniCluster.

   - If you see `matched/unreachable` in the Status field for *all* of the system-level fields, then you entered the system-level IP addresses and host names into DNS properly. Go to Step 7.
   - If you see `unmatched/unreachable` in the Status field for any of the system-level fields, then there was an issue with the DNS entry. Either verify the entries in DNS, or click the Back button to go to the previous screen to correct the IP addresses. Then repeat this step until all the system-level IP addresses and host names are shown as `matched/unreachable` in the Status field.

     Tip - You can also change the entries in the `IP Address` and `MiniCluster Hostname` columns (the first and second columns) by double-clicking in any field in those columns. Change the information in either of those columns to correspond with the entries in the `DNS Hostnames` column, then click the Check IP button again.

   Do not proceed with these procedures until you see `matched/unreachable` in the Status field for *all* of the system-level fields.

   Note - If you ran the Initial Configuration tool previously, you might already have two configuration files generated from that earlier run. Clicking Save in the next step will overwrite those previously-generated configuration files, so if you want to save those earlier files, rename them or move them to a different location before proceeding with the next step.

7. **Click the Save button in the summary screen after you have verified that the system-level IP addresses and host names were entered into DNS properly.**

   This generates the necessary configuration files.

8. **Verify that the configuration files were generated correctly.**

   The tool generates the `userinputs.txt` and `omcips.txt` files, which you need to complete the initial configuration procedure. The files are copied into the same directory where you ran the tool. Note this location for future use.

> **Note -** Do not manually edit the `userinputs.txt` or `omcips.txt` files. These files can only contain information that was generated through the Initial Configuration tool. You can rename the names of the files, if necessary, but you should retain the `userinputs` and `omcips` aspects of the file names to distinguish the file types (for example, `mc2-userinputs.txt` and `mc2-omcips.txt`).

9. **Click Finish.**

10. **Download the MiniCluster Component Bundle.**

    See "Download the MiniCluster Component Bundle" on page 14.

▼ Download the MiniCluster Component Bundle

In this procedure, you are downloading the MiniCluster component bundle, which is contained in a series of patch zip files. You are only downloading these patch zip files at this point, and you will move the MiniCluster component bundle files to the compute nodes later in the overall installation process.

1. **Access the MiniCluster MOS note 2153282.1, if you are not already there:**

   a. **Log in to My Oracle Support (MOS).**

      Go to the My Oracle Support (MOS) site:

      https://support.oracle.com/

      and click on the `Sign In` button to log in to the site.

   b. **Access the MiniCluster MOS note 2153282.1 that contains information on downloading the MiniCluster component bundle.**

      Enter `2153282.1` in the search field in the upper right corner of the page, or in the search field beneath the `Enter search terms` text lower on the page, and locate the MiniCluster MOS note (`Oracle MiniCluster S7-2 Software Download Center`).

2. **Locate the section in the MOS note that provides information on the *latest* version of the MiniCluster component bundle.**

   Click on the `Latest Release` link at the top of the MOS note, or on the `MiniCluster Component Bundle` link beneath the `Latest Release` link, to go to the section in the MOS note with the latest version of the MiniCluster component bundle.

3. **Click on the patch ID link for the latest version of the MiniCluster component bundle.**

   The MiniCluster component bundle is contained within a patchset. Clicking on the patch ID brings you to the download page for this particular patchset.

4. **Follow the instructions in the patch page to download the patch zip files that contain the MiniCluster component bundle.**

   Download the patch zip files onto any system, such as a laptop. Note that the information in the `Platform or Language` field on the patch page refers to the OS that runs on the MiniCluster itself, not the OS for the system where you will be downloading the patch zip files. You can download the patch zip files for the MiniCluster component bundle onto any system that runs the Windows, Solaris or Linux operating systems.

5. **Extract the downloaded patch zip files.**

   A set of TAR files are created.

   At this point in the process, you have downloaded and extracted the necessary MiniCluster component bundle files onto your system. You will move the MiniCluster component bundle files to the compute nodes later in the overall installation process.

6. **Cable the MiniCluster.**

   See .

Connecting Compute Node Interconnects and Storage Arrays
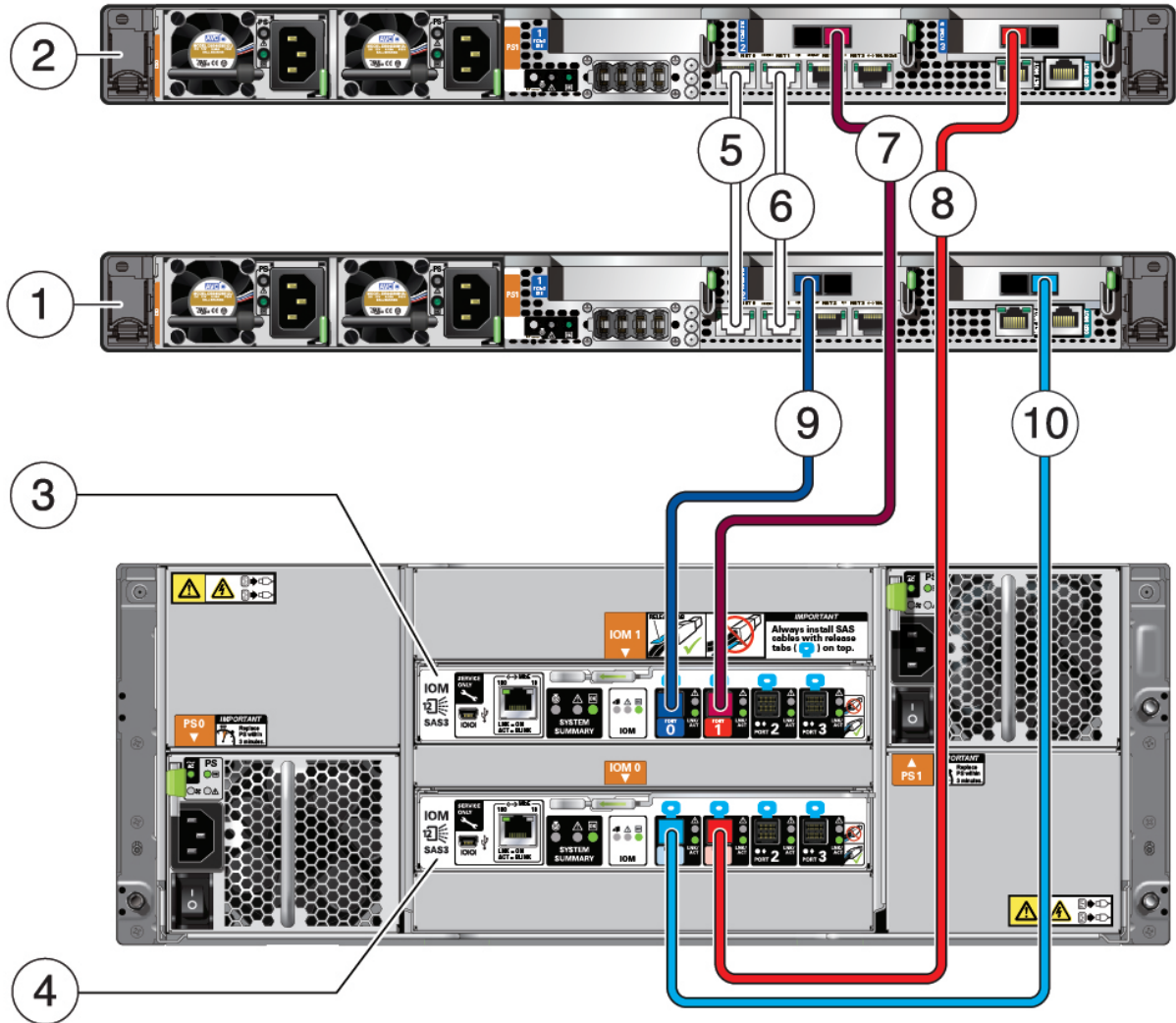
No.	Description	No.	Description
2	Compute node 2	3	Top I/O module (IOM 1) in base storage array
1	Compute node 1	4	Bottom I/O module (IOM 0) in base storage array

10GbE Private Network Connections

No.	Purpose	Start - Compute Node 1	End - Compute Node 2
5	Connect first 10GbE private network Ethernet cable.	Connect to NET 0 port.	Connect to NET 0 port.
6	Connect second 10GbE private network Ethernet cable.	Connect to NET 1 port.	Connect to NET 1 port.

Base Storage Array Connections

No.	Purpose	Start - Compute Node	End - Storage Array
7	Connect dark red SAS cable.	Connect to dark red port (SAS 1) in PCIe slot 2 in compute node 2.	Connect to dark red port (Port 1) in top I/O Module (IOM 1).
8	Connect light red SAS cable.	Connect to light red port (SAS 0) in PCIe slot 3 in compute node 2.	Connect to light red port (Port 1) in bottom I/O Module (IOM 0).
9	Connect dark blue SAS cable.	Connect to dark blue port (SAS 0) in PCIe slot 2 in compute node 1.	Connect to dark blue port (Port 0) in top I/O Module (IOM 1).
10	Connect light blue SAS cable.	Connect to light blue port (SAS 1) in PCIe slot 3 in compute node 1.	Connect to light blue port (Port 0) in bottom I/O Module (IOM 0).

Connect Second Storage Array to the Compute Nodes
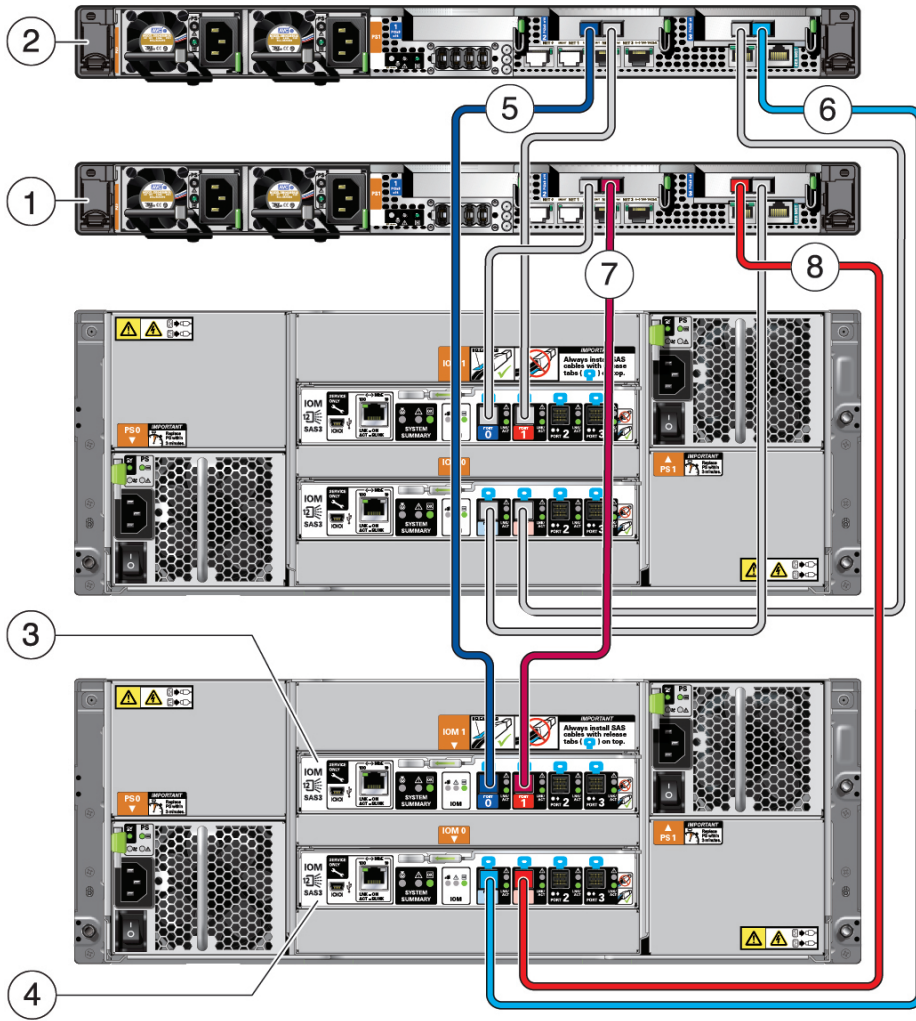
No.	Description	No.	Description
2	Compute node 2	3	Top I/O module (IOM 1) in second storage array
1	Compute node 1	4	Bottom I/O module (IOM 0) in second storage array

No.	Purpose	Start - Compute Node	End - Storage Array
5	Connect dark blue SAS cable.	Connect to dark blue port (SAS 0) in PCIe slot 2 in compute node 2.	Connect to dark blue port (Port 0) in top I/O Module (IOM 1).

No.	Purpose	Start - Compute Node	End - Storage Array
6	Connect light blue SAS cable.	Connect to light blue port (SAS 1) in PCIe slot 3 in compute node 2.	Connect to light blue port (Port 0) in bottom I/O Module (IOM 0).
7	Connect dark red SAS cable.	Connect to dark red port (SAS 1) in PCIe slot 2 in compute node 1.	Connect to dark red port (Port 1) in top I/O Module (IOM 1).
8	Connect light red SAS cable.	Connect to light red port (SAS 0) in PCIe slot 3 in compute node 1.	Connect to light red port (Port 1) in bottom I/O Module (IOM 0).

Connecting the Management and Client Access Networks, and Terminal Device
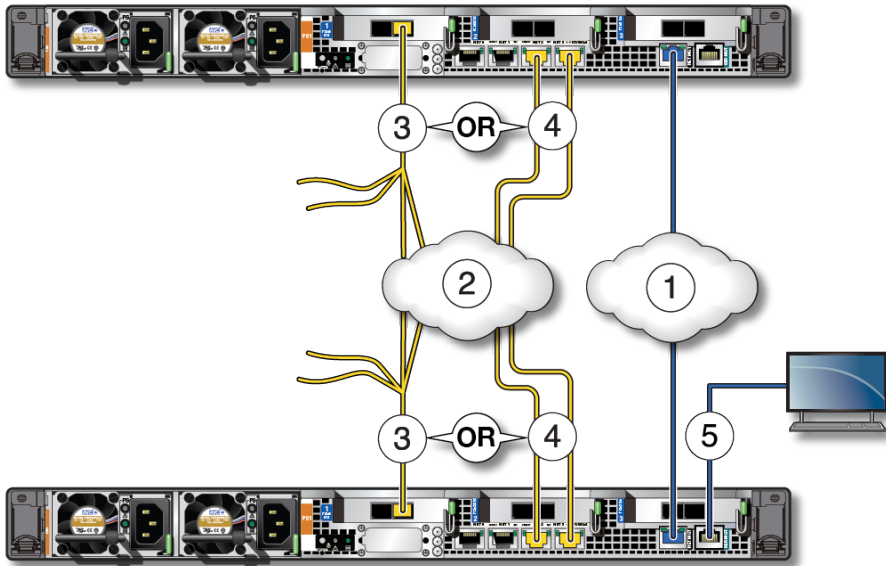
Management Network Connections

Make the following connections for both compute nodes (compute node 1 and 2).

No.	Purpose	Start - Compute Nodes 1 and 2	End - Management Network
1	Connect RJ-45 Ethernet cable.	Connect to NET MGT port on compute nodes 1 and 2.	Connect to management network through Ethernet switch.

10GbE Client Access Network Connections

Make **one** of these connections to the client access network, depending on the type of cabling that you want to use:

- **QSFP to 4x SFP+ splitter cable** — Copper cabling through the 10GbE NIC. This cable has a single connector at one end and is split into four connectors at the other end, though you will only use two of these four connectors. Additional transceivers are not needed for this cable.
- **MPO to 4x LC duplex splitter cable** — Fiber optic cabling through the 10GbE NIC. This cable has a single connector at one end and is split into four connectors at the other end, though you will only use two of these four connectors. Additional transceivers are needed for this cable, both for the 10GbE NICs in the compute nodes and for the 10GbE switch. Order and install these transceivers before proceeding with these instructions.
- **CAT6 cable** — Category 6/6E (RJ45) Ethernet cabling using NET 2 and NET 3 ports.

Make the same connections for both compute nodes (compute node 1 and 2).

No.	Purpose	Start - Compute Nodes 1 and 2	End - Client Access Network
2	10GbE client access network		
3	*Using 10GbE NIC to connect to client access network*	Connect the single-connector end of the cable to the P 0 port (rightmost port, or port A) on the 10GbE NIC installed in PCIe slot 1 in compute nodes 1 and 2.	Connect the first two ends of the cable (labeled A and B, or 1 and 2) to 10GbE switches connected to the client access network, leaving the other two ends of the cable (C and D, or 3 and 4) unconnected. If you want to isolate network traffic on two ports, connect the two cable ends to two different 10GbE switches.
4	*Using NET 2 and NET 3 ports to connect to client access network*	Connect one end of two CAT6 Ethernet cables to the NET 2 and NET 3 ports in compute nodes 1 and 2.	Connect the other ends of the two cables to 10GbE switches connected to the client access network. If you want to isolate network traffic on two ports, connect the two cables to two different 10GbE switches.

SER MGT Connection

Connect a terminal device to the SER MGT port only on the first compute node (compute node 1).

No.	Purpose	Start - Compute Node 1	End - Terminal Device
5	Connect a Category 5 (or better) RJ-45 cable to a terminal device.	Connect to SER MGT port.	Connect to terminal device or NTS server.

Note the following:

- When connecting a DB-9 cable, use an adapter to perform the crossovers given for each connector.
- Configure a terminal or terminal emulator with these settings:
    - 9600 baud
    - 8 bits
    - No parity
    - 1 Stop bit
    - No handshake

A null modem configuration is needed, meaning the transmit and receive signals are reversed (crossed over) for DTE to DTE communications. You can use the supplied RJ-45 crossover adapters with a standard RJ-45 cable to achieve the null modem configuration.

Powering On MiniCluster

▼ Connect the Power Cords

⚠️ **Caution -** Do not attach power cords to the power supplies on the compute nodes until you have connected the compute nodes to a serial terminal or a terminal emulator (PC or workstation). The compute nodes go into Standby mode and Oracle ILOM on the SP initializes as soon as power cables connect the power supplies to an external power source. System messages might be lost after 60 seconds if a terminal or terminal emulator is not connected to the SER MGT ports before power is applied.

Note - Oracle ILOM signals a fault if both power supplies on each compute node are not cabled at the same time, because that is a nonredundant condition. Do not be concerned with this fault in this situation.

Note - To guarantee redundancy, connect the power cords to separate and independent power sources.

1. **Connect the power cords to the separate external AC power sources, and supply power to the external power sources.**

2. **Route the power cords from the separate AC power sources to the rear of the compute nodes and storage array.**

3. **Ensure that you meet these electrical safety measures before applying power to the storage array:**

   - Provide a suitable power source with electrical overload protection to meet the power supply input voltage range of 100 to 240 VAC, 50 to 60 Hz. The storage arrays are compatible with 100 to 120 VAC or 200 to 240 VAC sources. The power source must not be overloaded by the total number of storage arrays in the rack.

   - Ensure that the power source provides a reliable earth connection for each storage array and the rack.

   - Ensure that the power source is easily accessible because the power cord is the main disconnect device for the storage array.

4. **For the storage array, plug a power cord into the power connector in each power supply.**

5. **For the compute nodes, connect the power cords to the power supplies.**

   When the power cords are connected, the SP initializes and the power supply LEDs illuminate. After a few minutes, the SP login prompt is displayed on the terminal device. At this time, the host is not initialized or powered on.

▼ Power On the Storage Array

1. **Push the on/off switches on the power supplies to the on (I) position.**

   Powering on can take several minutes.

2. **Ensure that the system Power LED on the front of the storage array is lit a steady green, and that each Fan Module LED on the rear of the power supplies is lit a steady green.**

▼ Power On the Compute Nodes for the First Time

1. **Connect a terminal device to the SER MGT port on compute node 1.**

   See "SER MGT Connection" on page 20.

2. **At the terminal device, log in to the SP.**

   The server is provided with an Administrator account (root) with an initial password (welcome1) to enable first-time login and access to Oracle ILOM. To ensure a secure environment, you must change the password as soon as possible after your initial login to Oracle ILOM. For instructions, refer to Change the Default Oracle ILOM root Passwords in the Oracle MiniCluster S7-2 Security Guide.

   If you find this default Administrator account has already been changed, contact your system administrator to obtain an Oracle ILOM user account with Administrator privileges.

   ```
   login: root
   Password: ********
   . . .
   ->
   ```

   For more information about administration tasks such as changing passwords, adding accounts, and setting account privileges, refer to the Oracle ILOM documentation.

3. **Power on both compute nodes using one of these methods.**

   - **Press the System Power button at the front of the compute nodes.**

   - **For compute node 1, at the Oracle ILOM prompt, type:**

     ```
     -> start /System
     Are you sure you want to start /System (y/n)? y
     ```

   The initialization might take several minutes to complete. The compute nodes are completely powered on when the OK LED at the front of the system is lit a steady green.

   To cancel the initialization, press the #. (Hash+Dot) keys to return to the Oracle ILOM prompt. Then type:
   ```
   stop /System
   ```

Configuring the MiniCluster

When you first get the MiniCluster, the Oracle Solaris OS is preinstalled on both compute nodes. Once you boot up both compute nodes, you then must go through the MiniCluster-specific initial installation procedures.

The mcinstall user is set up at Oracle before the MiniCluster is shipped to your site. The mcinstall user is given the main system administrator role for MiniCluster, similar to the traditional root user role. Only the mcinstall user can go through the initial installation and administration procedures.

▼ Assign a Static IP Address to the NET MGT Port

1. **Verify that all the hardware cabling is complete, especially the 10GbE private network cabling.**

Part of the initial installation process uses the 10GbE private network to reassign the static IP address on compute node 2. Do not proceed with these instructions if you have not completed the 10GbE private network cabling procedure. See "10GbE Client Access Network Connections" on page 19.

2. **Power on the storage array and both compute nodes.**

   See "Power On the Storage Array" on page 21 and "Power On the Compute Nodes for the First Time" on page 22.

3. **Connect to Oracle ILOM through the SER MGT port on compute node 1.**

   See "SER MGT Connection" on page 20. Log in as root with the initial password (see "Power On the Compute Nodes for the First Time" on page 22), but without the domain name.

   For example, if you used `mc2-n1-ilom.us.example.com` for the DNS entry, enter this for this command:

   ```
   -> set /SP hostname=mc2-n1-ilom
   ```

4. **Set the SP to accept a static IP address.**

   ```
   -> set /SP/network pendingipdiscovery=static
   Set 'pendingipdiscovery' to 'static'
   ```

5. **Set the IP address for the SP.**

   ```
   -> set /SP/network pendingipaddress=service-processor-IPaddr
   Set 'pendingipaddress' to 'service-processor-IPaddr'
   ```

   where *service-processor-IPaddr* is the Oracle ILOM IP address for the SP on compute node 1 that you entered into DNS in "Performing Preliminary Tasks" on page 4.

6. **Set the IP address for the SP gateway.**

   ```
   -> set /SP/network pendingipgateway=gateway-IPaddr
   Set 'pendingipgateway' to 'gateway-IPaddr'
   ```

   where *gateway-IPaddr* is the gateway that you entered in the Initial Configuration tool or in the table in "Performing Preliminary Tasks" on page 4.

7. **Set the netmask for the SP.**

   ```
   -> set /SP/network pendingipnetmask=netmask
   Set 'pendingipnetmask' to 'netmask'
   ```

   where *netmask* is the netmask (subnet mask) that you entered in the Initial Configuration tool or in the table in "Performing Preliminary Tasks" on page 4. The information that you provided for the subnet mask was in CIDR format. For example, if you used the CIDR format of 22 for the subnet mask, use `255.255.252.0` for this command.

8. **Verify that the parameters were set correctly.**

   The code example shows parameters that have been set to convert an SP from a DHCP configuration to a static configuration.

   ```
   -> show /SP/network -display properties
   /SP/network
     Properties:
         commitpending = (Cannot show property)
         dhcp_server_ip = none
   ```

```
            ipaddress = xxx.xxx.xxx.xxx
            ipdiscovery = dhcp
            ipgateway = xxx.xxx.xxx.xxx
            ipnetmask = 255.255.xxx.0
            macaddress = 00:21:28:6F:A7:BB
            managementport = /SYS/MB/SP/NETMGMT
            outofbandmacaddress = 00:21:28:6F:A7:BB
            pendingipaddress = xxx.xxx.xxx.xxx
            pendingipdiscovery = static
            pendingipgateway = xxx.xxx.xxx.xxx
            pendingipnetmask = 255.255.255.0
            pendingmanagementport = /SYS/MB/SP/NETMGMT
            sidebandmacaddress = 00:21:F8:6F:A7:BA
            state = enabled
```

9. **Commit the changes.**

   set /SP/network commitpending=true
   Set 'commitpending' to 'true'

10. **Type the show /SP/network command again to verify that the parameters have been updated.**

    The NET MGT port is now accessible.

▼ Log In To Compute Node 1 (Oracle ILOM)

1. **On compute node 1, connect to the Oracle ILOM on the SP using the NET MGT port.**

   Use the settings that you provided in "Assign a Static IP Address to the NET MGT Port" on page 22. For example, connect to the Oracle ILOM on the SP on compute node 1 by using a terminal emulator and typing:

   # ssh root@*ILOM-IPaddress*

   where *ILOM-IPaddress* is the Oracle ILOM IP address that you assigned to the service processor on the first compute node in "Assign a Static IP Address to the NET MGT Port" on page 22.

   Note - After the initial installation is complete, change the default ILOM password for both compute nodes. Refer to Change the Default Oracle ILOM root Passwords in the *Oracle MiniCluster S7-2 Security Guide*.

2. **Connect to the host console.**

   start /HOST/console

   Type **y** when you see the question Are you sure you want to start /HOST/console (y/n).

3. **Log in to compute node 1 as the mcinstall user with initial password of welcome1, if necessary.**

4. **Determine if you want to copy the generated configuration files to compute node 1.**

   The userinputs.txt or omcips.txt configuration files were generated at the end of "Performing Preliminary Tasks" on page 4.

   ■ **If you want to perform the initial configuration using these configuration files, copy them to compute node 1.**

Go to .

- **If you do not want to copy the configuration files to compute node 1, enter the necessary information manually.**

  Go to .

▼ Copy Configuration Files to Compute Node 1

1. Type the installation command and provide the necessary information to create a temporary IP address for compute node 1.

```
compute-node-1% installmc --init
Enter Temporary IP addresses :
Enter Netmask in CIDR form (valid range: 8-28) :
Enter Default Gateway Address :
Type of Cable Used to Connect Network Ports with the 10 GbE Switch: Copper/Fiber :
```

where:

- Temporary IP address is the IP address for compute node 1 that you entered into DNS in .
- Netmask in CIDR form is the netmask (subnet mask) that you entered in the Initial Configuration Tool in . For example, 23.
- Default gateway address is the gateway that you entered in the Initial Configuration Tool in .
- Type of cable that you used to connect the MiniCluster to the 10GbE client access network (copper or fiber). See for more information.

After you enter all the necessary information, after 15 or 20 seconds, an Input Summary screen appears.

In the `Do you want to change the inputs?` line, type **N** if all the information is correct, or **Y** if you need to redo any of the information that you entered.

This screen appears:

```
--------------------------------------------------------------------------------
Initialization of Temporary IP Complete.
Please copy over omcips.txt,userinputs.txt to /var/opt/oracle.minicluster/store if you have generated
 them using the offline tool.
Then, run installmc --deploy to continue with Firstnet setup
--------------------------------------------------------------------------------
```

2. Locate the two configuration files that were generated using the Initial Configuration tool (`userinputs.txt` and `omcips.txt`).

See .

3. From the remote system where you ran the Initial Configuration tool, transfer those two configuration files to the `/var/opt/oracle.minicluster/store` directory on compute node 1.

```
remote-system# scp userinputs.txt omcips.txt mcinstall@ipaddress:/var/opt/oracle.minicluster/store
```

where *ipaddress* is the temporary IP address that you entered in .

If you use a tool such as WinSCP to transfer the two configuration files to compute node 1, use the temporary IP address that you entered in , and log in as mcinstall, with the initial password (see).

4. **Perform the initial configuration of the system.**

   Go to .

▼ Perform Initial Configuration

1. **From compute node 1, type the deployment command to continue the initial configuration process.**

   Note - If the installmc command is not recognized, you might have to type the full path to the deployment command: /var/opt/oracle.minicluster/bin/installmc --deploy

   ---

   compute-node-1% **installmc --deploy**

   The installmc window appears.

2. **Type y to start the initial system configuration.**

   - If you copied the userinputs.txt and omcips.txt configuration files to the /var/opt/oracle.minicluster/store directory on compute node 1, then the initial system configuration steps are performed automatically for you. The information that you entered earlier is displayed.

     If you want to use the existing configuration information, type **Y**. Go to .

     If you do not want to use that configuration information, type **N**. You will be prompted to enter the information manually.

   - If you did not copy the two configuration files to the correct directory on compute node 1, then this message appears:

     ```
     [INFO   ]  Configuring Firstnet..
     [INFO   ] userinputs.txt does not exist in /var/opt/oracle.minicluster/store
     [INFO   ] omcips.txt does not exist in /var/opt/oracle.minicluster/store
     Did not find the userinputs.txt or  omcips.txt files in /var/opt/oracle.minicluster/store.  Do
      you wish to continue and generate the data now ? (Y/N)(N):
     ```

     Type **Y** to continue the initial system configuration process, and type the necessary information at the appropriate prompts.

     ```
     Enter Unique Prefix for this MiniCluster :
     Enter Netmask in CIDR form (valid range: 8-28) :
     Enter First IP address in IP addresses range 1 :
     Enter Count of IP addresses reserved for range 1 :
     Do you want to input more IP addresses range? Enter Y/N (Y):
     Enter Default Gateway Address :
     ```

```
Enter Domain Name :
Enter Comma Separated List of IP Addresses of DNS Servers :
Enter Comma Separated List of NTP Servers :
[ILOM] Enter Netmask in CIDR form (valid range: 8-31) for ILOM :
[ILOM] Enter ILOM IP address of first compute node :
[ILOM] Enter ILOM IP address of second compute node :
[ILOM] Enter Default Gateway Address for ILOM :
[ILOM] Enter Comma Separated List of IP Addresses of DNS Servers for ILOM :
[ILOM] Enter Comma Separated List of NTP Servers for ILOM :
Type of Cable Used to Connect Network Ports with the 10 GbE Switch: Copper/Fiber :
Enter CAN HA type (IPMP/AGGR) :
Enter your location 1 :
Enter your location 2 :
Enable PCI DSS Compliance: Yes/No (No):
Enter Security Keystore Type [Choose: pkcs11] :
VLAN ID is optional. Do you want to input this value? Enter Y/N (N):
Port VLAN ID is optional. Do you want to input this value? Enter Y/N (N):
[ILOM] VLAN ID for ILOM is optional. Do you want to input this value? Enter Y/N (N):
[ILOM] Port VLAN ID for ILOM is optional. Do you want to input this value? Enter Y/N (N):
```

An input summary page is generated. Type **Y** if you are satisfied with the information displayed or **N** if you want to change the information displayed.

```
---------- Input Summary ----------
MACHINE_TYPE = S7-2
OMC_UPREFIX = mc2
FIRST_PUBLIC_IP = xx.xxx.xx.xx
IPCOUNT = 50
GATEWAY = xx.xxx.xx.xx
NETMASK_CIDR = 22
DOMAIN_NAME = us.example.com
DNS_SERVER_LIST = xx.xxx.xx.xx,yy.yyy.yy.yy
NTP_SERVER_LIST = xx.xxx.xx.xx
CAN_CABLE_TYPE = COPPER
FIRST_ILOM_IP = xx.xxx.xx.xx
SECOND_ILOM_IP = xx.xxx.xx.xx
ILOM_GATEWAY = xx.xxx.xx.xx
ILOM_NETMASK_CIDR = 24
ILOM_DNS_SERVER_LIST = xx.xxx.xx.xx,yy.yyy.yy.yy
ILOM_NTP_SERVER_LIST = xx.xxx.xx.xx
CAN_HA = YES
CAN_HA_TYPE = IPMP
SS_DISK_COUNT = 6
TZ = America/Los_Angeles
PCI_DSS_COMPL = NO
```

```
KEYSTORE_TYPE = pkcs11
Do you want to change the inputs? Enter Y/N (N):
```

3. **Verify that the initial system configuration process completes successfully.**

The `installmc --deploy` command goes through these processes:

Number	Step
1	Gather user inputs
2	Prepare for system install
3	Interconnect setup
4	Configure explorer
5	Check system readiness
6	Verify topology
7	Prepare network interfaces
8	Configure client access network on node 1
9	Configure client access network on node 2
10	Configure NTP client, set password policy and setup Apache web server

- **Steps 1 through 3 complete automatically.**

- **Enter Explorer information at Step 4 in the initial system configuration process.**

  Explorer output enables Oracle's engineers to perform assessments of the system by applying the output against knowledge-based rules engine. For more information on Explorer, refer to the following documents:

  - Chapter 2, "Oracle Explorer Data Collector," in Services Tools Bundle (STB) User's Guide
  - Oracle Explorer FAQ

  For the Explorer questions at Step 4 in the MiniCluster initial system configuration process:

  - Provide the standard information for your company at the appropriate prompts.
  - Press Return to accept the default entries at these prompts:
    - `Absolute path of the Explorer output top location? [/var/explorer/output]`
    - `Select the Explorer default transport upload method from this list:`

      `1) Using Diagnostic Assistant (DA)`

      `2) Other transport`

      `3) None`

      `[Using Diagnostic Assistant (DA)]`
    - `Do you want to configure Diagnostic Assistant to save credentials (y/n)? [y]`
  - Enter a dash (**-**) at the Solaris zones prompt:

Solaris zones:

    By default, Explorer collects data from all running local zones when the option -
    w localzones is specified. If you wish to limit data collection to only some of
    the local zones, enter the names of those zones below. Separate multiple zone names
    with a comma ','.

    Comma-separated list of zone names or '-' for all zones []:

Note that you will not be able to schedule a cron job for Explorer, as shown in the message that appears
as part of Step 4 in the initial system configuration process:

[INFO] Please do not schedule any cron job to run the Explorer, as cron entries will be removed
 and not run on the MiniCluster.

■ **Steps 5 through 10 complete automatically.**

Note - Do not interrupt this process. Wait until you see the message Configuring Firstnet Completed
before proceeding. It normally takes 1 to 2 hours to complete these steps.

4. Verify that the process completed successfully.

The process has completed successfully when you see the message Configuring Firstnet Completed.

Note - If the process fails at any point, refer to the *Oracle MiniCluster S7-2 Installation Guide* for more
information on steps you can take to correct certain issues.

5. Note the BUI login information in the completed output.

Successful completion yields output similar to this:

```
--------------------------------------------------------------------------------
Please download the MiniCluster Component Bundle from Oracle MiniCluster S7-2 Software Download
 Center (My Oracle Support Doc ID: 2153282.1) and follow the instructions if not done already.
If you download the Bundle on your local host, transfer files to both MiniCluster nodes by executing
 step 1 on both nodes
        1.scp <path-on-local-host>/mc-*-sfw.tar.a* mcinstall@<ip-or-host-of-node>:/var/tmp

        If you downloaded the Bundle directly on MiniCluster nodes, then make sure both nodes have
 the Bundle under /var/tmp directory.

        Then run these steps -
        2.cd /var/tmp on both the nodes and extract the files using
        3.cat mc-*-sfw.tar.a? | gtar -x -C /var/opt/oracle.minicluster/ -f -

    Please use browser user interface (BUI) to complete the system and tenant setup
    URL:
        https://compute-node1-hostname/MCMU -OR- https://compute-node1-IP-address/MCMU
        Administrator login ID: mcinstall.

    If you want to continue using Command Line Interface(CLI) and are currently connected via ILOM,
```

```
    login back to the host as mcinstall user, using public hostname or IP Address, then follow these
 steps -
    1.Register mcinstall user using 'mcmu user --create -u mcinstall -e <email> -n <fullname> -p
<phone>' command
    2.Supervisor must check email and register 'mcinstall' user to activate account
    3.Change mcinstall user password using 'mcmu user --changepswd -u mcinstall' command
    4.Continue with setup using 'mcmu setupmc -s all' command
---------------------------------------------------------------------------------
```

where the *compute-node1-hostname* and *compute-node1-IP-address* is the same information in the IP
Hostname Mapping screen in "Performing Preliminary Tasks" on page 4.

Note - In some situations, the core software on your MiniCluster is older and needs to be updated. In that
situation, you will see a similar message, telling you to also download the MiniCluster Core Software from
the download center. In that case, locate the latest release of the MiniCluster Core Software and install that
software using the instructions in the MiniCluster MOS note 2153282.1.

▼ Transfer and Install MiniCluster Component Bundle

In this procedure, you are transferring the MiniCluster component bundle files that you downloaded in
"Download the MiniCluster Component Bundle" on page 14 to both MiniCluster compute nodes and
installing those component bundle files.

1. Locate the MiniCluster component bundle files that you downloaded earlier.

See "Download the MiniCluster Component Bundle" on page 14.

**2. From the remote system where you downloaded the MiniCluster component bundle files,
transfer those component bundle files to the `/var/tmp` directory on compute node 1.**

From a terminal window, type:

remote-system# **scp** *path-on-remote-system***/mc-*-sfw.tar.a* mcinstall@***ipaddress***:/var/tmp**

where *ipaddress* is the IP address for compute node 1 that was provided in the output screen after installmc
--deploy was successfully completed. You can also find the IP address for compute node 1 in the omcips.
txt file that was generated as part of the process in "Initial Configuration Tasks" on page 4.

If you use a tool such as WinSCP to transfer the component bundle files to compute node 1, use the IP
address for compute node 1, and log in as mcinstall, with the initial password (see "Power On the Compute
Nodes for the First Time" on page 22).

3. On compute node 1, change to the `/var/tmp` directory.

**4. Concatenate and extract the component bundle packages to the `/var/opt/`
`oracle.minicluster/` directory.**

compute-node-1% **cat** *component-bundle***.tar.a? | gtar -x -C /var/opt/oracle.minicluster/ -f -**

The a? portion of the command is essentially a wild card entry, encompassing TAR files that end with .aa,
.ab, and so on.

For example, if the component bundle packages are named `mc-1.1.13-sfw.tar.aa` to `mc-1.1.13-sfw.tar.ah`, type:

compute-node-1% **cat mc-1.1.13-sfw.tar.a? | gtar -x -C /var/opt/oracle.minicluster/ -f -**

5. **Log in to compute node 2 as the `mcinstall` user with the initial password (see "Power On the Compute Nodes for the First Time" on page 22).**

   # ssh mcinstall@*compute-node2-IP-address*

   where *compute-node2-IP-address* is the IP address on the client access network for compute node 2 that you entered into DNS in "Initial Configuration Tasks" on page 4. You can also find the IP address for compute node 2 in the `omcips.txt` file that was generated as part of the process in "Initial Configuration Tasks" on page 4.

6. **Repeat Step 2 to Step 4 to copy the same MiniCluster component bundle files to the `/var/tmp` directory on compute node 2.**

   You can copy the component bundle files from either the remote system or from compute node 1 to the `/var/tmp` directory on compute node 2.

7. **Disconnect from the Oracle ILOM connection through the NET MGT port, if necessary.**

   Once the `installmc` process has completed, both compute nodes should be reachable directly from the client access network. Disconnect from the Oracle ILOM connection through the NET MGT port.

8. **Log in to the MiniCluster Configuration Utility browser user interface (MCMU BUI) for the first time.**

   Note - You can also use the CLI to set up the MiniCluster at this point. Refer to the *Oracle MiniCluster S7-2 Administration Guide* for those instructions.

▼ Log In To the MCMU BUI for the First Time

1. **Start the MCMU BUI.**

   Open a web browser and type:

   `https://`*compute-node1-hostname*`/MCMU/`

   where the *compute-node1-hostname* was provided in the output when `installmc` was completed. This compute node 1 client access network hostname was also in "Performing Preliminary Tasks" on page 4. For example:

   `https://mc2-n1.us.example.com/MCMU/`

   The login window appears.

   Note - In some situations, you might see a window stating that your connection is not secure. If this occurs, add a security exception so that you can access the MCMU BUI.

2. **Log in to the system as the `mcinstall` user.**

3. **Click Login.**

The MiniCluster Install Administrator Account Registration window appears.

▼ Create the Install Administrator Account

Set up two accounts as part of this process:

- **Install Administrator** — A MiniCluster-specific user account. The Install Administrator has full administrative privileges, and can perform all BUI and CLI operations, and approve new users.
- **Supervisor** — An existing user account outside of the MiniCluster. The Supervisor role is used to provide a second layer in the approval process (for example, if you want to include your company's Human Resources department in the approval process for any new user being created).

Whenever you create a new user account, *two* users approve that new user account: the Install Administrator and the supervisor. Both of those users get the approval email, and both need to approve any new user.

1. **Type the necessary information for the Install Administrator in the appropriate fields.**
2. **Type the necessary company information in the appropriate fields.**
3. **Type the necessary information for the Supervisor in the appropriate fields.**

The Supervisor role is outside of the MiniCluster and is used to provide a second layer in the approval process.

4. **Click the Register button at the bottom of the page when you have filled in all the fields in this registration page.**

▼ Approve the New Install Administrator Account

1. **Access the email account for the Install Administrator that you entered in the Install Administrator Account Registration screen.**
2. **Locate the mail from the `mcinstall` user.**

You see mail similar to this, where you are asked to approve the new Install Administrator account that you just created:

```
Dear MiniCluster Administrator,
 A new user has been created and is awaiting your action. Please approve or deny registration of user
 Joe Smith, as Primary Admin  by following the link provided:
 https://compute-node1-hostname/MCMU/admin_approve/
mcinstall/749cee7610a4e594ee867b243a22cae537fe77b81b92c4aad33d8befbd8e8611/approve/
```

3. **Copy the approval link URL string from the mail.**

For example, using the example output, you would copy this approval link URL string:

https://*compute-node1-hostname*/MCMU/admin_approve/
mcinstall/749cee7610a4e594ee867b243a22cae537fe77b81b92c4aad33d8befbd8e8611/approve/

4. **In a web browser, paste the approval link URL from the mail and press Return.**

The approval screen appears.

5. **Select Approve, then click Submit.**

6. **Access the email sent to the supervisor account email and repeat Step 3 through Step 5.**

   A screen appears, confirming that the Install Administrator account has been approved.

▼ Finish Setting Up the Install Administrator Account

1. **Click the Return to the MCMU LOGIN page link in the approval page, or access `https:`** `//`*compute-node1-hostname*`/MCMU/` **again.**

   The login window appears.

2. **Log in to the system as the `mcinstall` user again.**

3. **Click Login.**

   The MiniCluster Install and Administrator Account password reset window appears.

4. **Create a unique password for the new Install Administrator.**

   Note these password restrictions:

   - Minimum of 14 characters
   - Cannot match the previous 10 passwords
   - Must differ from the previous password by at least 3 characters
   - Must contain a minimum of:
     - 1 digit
     - 1 uppercase letter
     - 2 alphabetic characters
     - 1 non-alphabetic character
   - Username and password cannot be identical

5. **Click Change Password.**

   A window appears, prompting you to change the password for the Supervisor account.

▼ Finish Setting Up the Supervisor Account

You entered information on the Supervisor account in the Account Registration page earlier, where you provided information such as the Supervisor username, and the full name and email address for the person or group who will be using the Supervisor account. Change the password for the Supervisor account using these instructions.

1. **Log in to the Supervisor account with the default settings.**

   Enter the username that you provided in the Account Registration page for the Supervisor account and use the initial password that was used with other accounts (see "Power On the Compute Nodes for the First Time" on page 22).

2. **Click Reset Password.**

The password reset page for the Supervisor account appears.

3. **Create a unique password for the Supervisor.**

    Note these password restrictions:

    - Minimum of 14 characters
    - Cannot match the previous 10 passwords
    - Must differ from the previous password by at least 3 characters
    - Must contain a minimum of:
        - 1 digit
        - 1 uppercase letter
        - 2 alphabetic characters
        - 1 non-alphabetic character
    - Username and password cannot be identical

4. **Click Change Password.**

    The MCMU login page appears.

5. **Log in to the Install Administrator account with the new password.**

    - **Username** — mcinstall
    - **Password** — The password for the mcinstall user that you set in "Finish Setting Up the Install Administrator Account" on page 33.

6. **Click Login.**

    The Welcome to MiniCluster Configuration Utility page appears.

▼ Set Up the System

1. **Click on the Next button at the bottom of the page.**

    The System Setup page appears.

2. **Verify that you have downloaded and installed the MiniCluster component bundle onto** *both* **compute nodes.**

    Certain steps in the remaining initial configuration process will fail if you have not installed the MiniCluster component bundle on both compute nodes. See "Transfer and Install MiniCluster Component Bundle" on page 30 for more information.

3. **Locate the first step that needs to be run and click the Run button, or click the Run All Steps button.**

    As part of the process in "Perform Initial Configuration" on page 26, you went through steps 1 through 10 using the installmc tool. So those steps should be shown as Finished in the Status column.

    Complete the remaining steps in this System Setup page, either by clicking the Run button for each step, or by clicking the Run All Steps button. Clicking the Run All Steps button will begin the process after the last

completed step (in this case, after Step 10). It normally takes about 3 to 4 hours to run all of the remaining steps in this page. Click Hide Detail to provide less detail or Show Detail to provide more detail for all of the steps that are run on this screen.

4. **When all the steps have run successfully, click the Continue button.**

   The Create Profile page appears.

5. **Determine if you want to create virtual machine groups (database or application) as part of the initial installation.**

   You are provided with a walk-through on creating virtual machine groups. If you decide not to create virtual machine groups as part of the initial configuration, click on the Skip button in any screen until you get to the Home page in the MCMU BUI. You can create virtual machine groups manually at any point later on.

   Refer to these documents for more information:

   - *Oracle MiniCluster S7-2 Installation Guide* — Provides detailed system installation and configuration information, including how to create VM groups as part of the initial installation walk-through.
   - *Oracle MiniCluster S7-2 Administration Guide* — Provides instructions for creating database or application VM groups.

6. **Perform other appropriate administration tasks, as necessary.**

   These are important post-installation activities:

   - Configure the password for the Oracle Engineered Systems Hardware Manager. Refer to

     For instructions refer to Unresolved link to " Configure the Oracle Engineered System Hardware Manager Password in Oracle MiniCluster S7-2 Installation Guide"

   - Configure the `mctuner` notification email address so that, If the tuning assistant detects any issues, it sends email notifications to the email address that is configured for the tuning assistant.

     For instructions, refer to Unresolved link to " Configure the mctuner Notification Email Address (CLI) in Oracle MiniCluster S7-2 Administration Guide"

Product Documentation Library

Documentation and resources for this product and related products are available at `http://www.oracle.com/goto/minicluster-s7-2/docs`.

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